

## Development of MuSCAT3 for ground-based follow-up observations of TESS candidate exoplanets

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NASA's Transiting Exoplanet Survey Satellite (TESS), launched on 2018 April 18, will start its survey for northern sky from 2019 summer. TESS is expected to find a large number of candidate transiting exoplanets after 2019 autumn.

Toward the start of the northern sky survey, we are now developing a 4-color simultaneous camera MuSCAT3 for the 1.2m telescope located in the Fred Lawrence Whipple Observatory on Mt. Hopkins in Arizona, USA. This is a successor of existing multi-color simultaneous cameras MuSCAT1/2 on the 188cm telescope in Okayama, Japan and on the 1.52m telescope in Tenerife, Canaries, Spain. MuSCAT3 will work with MuSCAT1/2 and enable 24-hour multi-color simultaneous imaging/photometry in the northern hemisphere. This is the one and only multi-color transit observation network in the world as of 2019. Thereby, we can conduct intensive ground-based follow-up observations rapidly after TESS's data releases, and can lead in discriminating and finding true interesting transiting planets in the world. In this presentation, we will introduce the specifications of MuSCAT3 and the 1.2m telescope, and present prospects of MuSCAT3 development and synergies with TESS and MuSCAT1/2.

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